

Application Serial No. 10/585,477
Reply to Office Action of May 24, 2010

PATENT
Docket: CU-4938

REMARKS

In the Office Action, dated May 24, 2010, the Examiner states that Claims 1-12 are pending and rejected. By the present Amendment, Applicant amends the specification and the claims.

Drawings

The drawings are objected to because the Office Action does not consider that they show each and every feature of Claim 11, such as the rectangular cross-sectional shape and an outer peripheral surface thereof being flat. Applicant indicates that Claim 11 is cancelled without prejudice or disclaimer of the subject matter thereof. Therefore, withdrawal of the present objection is respectfully requested.

Specification

The Specification is objected to for not including each and every section heading in the guidelines for the preferred layout for the specification of a utility application. Applicant indicates that it has inserted the relevant section headings into the specification by the present amendment and therefore, withdrawal of the present objection is respectfully requested.

Rejections under 35 U.S.C. §112

Claims 1-12 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the invention. Applicant considers that as the term "wire material for a coil expander" was heavily used in the original claims, this may have made it difficult to differentiate each of the characteristics of the coil expander and those of the wire material recited in the claims. Thus, Applicant has amended the claims whereby the feature of a cross-sectional shape of the wire material has been changed to the "rectangular shape with a ... curved surface." Also, the cross-sectional shape of the coil expanders is amended to be the "rectangular shape with four flat surfaces", and the phrase "when the coil expander is formed by coiling the wire material, the convex curved surface of the wire material is deformed to be a flat surface constituting an outer peripheral surface of the coil expander" was added. Thereby, the cross-sectional shape of the wire material and the cross-sectional shape of the wire material and the cross-sectional shape of the coil expander formed by using the wire material are made

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clear. In view of the foregoing amendments, Applicant respectfully requests withdrawal of the rejection of Claims 1-12 under 35 U.S.C. §112, second paragraph.

Rejections under 35 U.S.C. §102(b) and §103(a)

Claims 11 and 12 are rejected under 35 U.S.C. §102(b) as being anticipated by Hoshi (JP 60-101247). Claims 1-8 and 10 are rejected under 35 U.S.C. §102(b) as being anticipated by Goldstein et al. (US 5,542,682). Claims 2-3 and 5-6 are rejected under 35 U.S.C. §103(a) as being unpatentable over Goldstein. Claims 1-12 are rejected under 35 U.S.C. §103(a) as being unpatentable over Masuyama et al. (US 6,860,485) in view of Goldstein (US 5,542,682). Claims 11-12 are rejected under 35 U.S.C. §103(a) as being unpatentable over Mercier (US 4,114,905) in view of Masuyama. Applicant respectfully disagrees with and traverses these rejections.

The presently claimed invention relates to the "wire material" which has the cross-sectional shape as shown in FIG. 1 of the present application (dependent Claim 3 refers to the concave curved surface). In other words, the presently claimed invention relates to the wire material which has the cross-sectional shape where one of the surfaces out of four surfaces of the rectangle is convex curved surface.

When a coil expander is formed by using the wire material of the present invention, the "convex curved surface" is deformed to be a flat surface and the cross-sectional shape of the formed coil expander becomes the "rectangular shape with four flat surfaces."

The Office Action appeared to have some difficulty in understanding the above-mentioned cross-sectional shape of wire material and coil expander. To help the understanding of these points, Applicant has amended the claims for clarity purposes.

As explained on page 3, lines 4-23 of the specification, when a coil expander is formed by coiling a wire material having a cross-sectional shape of rectangular shape with four flat surfaces (a conventional product), the following case may arise: "... the cross-sectional shape thereof may be deformed into a concave shape, for example, on the outer peripheral surface thereof due to stress such as tangential force, compression, etc., that is caused when the coil expander is bent into a coil shape." As the coil expander locally slides strongly, a problem arises in that abnormal wear occurs and strength reduces as the result.

To solve the above-mentioned problem, the "surface of the wire material",

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which becomes the outer peripheral of the coil expander when the expander is coiled, is made into the convex curved surface and the cross-sectional shape of the wire material is made into the "rectangular shape with a convex curved surface" for the present invention. By using such "wire material having the curved surface", it is possible to balance out the deformation caused by the stress generated at the time of bending the wire material into a coil shape and to obtain the coil expander having the cross-sectional shape of "rectangular shape with four flat surfaces" without performing an additional process, such as a cutting of the wire material, after the coil formation.

Although the cited prior art references disclose the "coil expander having a cross-sectional shape of a rectangular shape with four flat surfaces" and the "wire material having a cross-sectional shape of a rectangular shape with four flat surfaces," unlike the present invention, they do not teach or suggest a wire material having the cross-sectional shape "with a curved surface at the longer side of the rectangular." As such, even if the references are combined as suggested in the Office Action, the resulting combination would fall short of yielding the presently claimed invention.

To support a *prima facie* case of obviousness, the Office Action must establish "a finding that the prior art included each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference." Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in view of *KSR International Co. v. Teleflex Inc.*, 72 Fed. Reg. 57,526 (Oct. 10, 2007). Since the prior art does not teach or suggest each and every feature of the presently claimed invention, Applicant respectfully asserts that a *prima facie* case of obviousness cannot presently be established.

To more clearly distinguish the presently claimed invention from the ellipse-like figure (figure formed by two curved surfaces and two flat surfaces) illustrated by 50b in FIG. 6 of Goldstein, the phrase "with a ... curved surface at the longer side of the rectangular ..." is added in the amended Claim 1. When a wire material having the cross-sectional shape, where a longer side is a flat surface and the shorter side is a curved surface, as illustrated in 50b of Goldstein, is used to form a coil expander, the outer peripheral of the coil expander becomes deformed in concave

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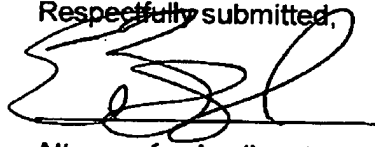
shape. As explained above, an object of the present invention is to provide a wire material for obtaining the "coil expander having the cross-sectional shape of a rectangular shape with four flat surfaces." Thus, it is impossible to attain this object even if the wire material having the cross-sectional shape of 50b of Goldstein is used.

In view of the foregoing remarks, Applicant respectfully requests withdrawal of the present rejections under 35 U.S.C. §102(b) and 35 U.S.C. §103(a).

In light of the foregoing response, all the outstanding objections and rejections are considered overcome. Applicant respectfully submits that this application should now be in condition for allowance and respectfully requests favorable consideration.

August 23, 2010
Date

Respectfully submitted,



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